

NATURAL RESOURCES CONSERVATION SERVICE  
CONSERVATION PRACTICE STANDARD

**PRESCRIBED BURNING**

(Acre)  
CODE 338

**DEFINITION**

Applying controlled fire to predetermined area.

Existing barriers such as lakes, streams, wetlands, roads, and constructed firebreaks are important to the design and layout of this practice.

**PURPOSES**

- \* To control undesirable vegetation.
- \* Prepare sites for planting or seeding.
- \* Control plant disease.
- \* Reduce wildfire hazards.
- \* Improve wildlife habitat.
- \* Improve forage production quantity and/or quality.
- \* Slash and debris removal.
- \* Enhance seed and seedling production.
- \* To facilitate distribution of grazing and browsing animals.

Adjoining landowners within the airshed should be notified prior to burning.

Liability and safety precautions are to be planned before the burn and monitored during the burn.

**Planning Considerations**

This is one of several alternatives used for vegetation management. Alternatives should be discussed thoroughly with the cooperator. PRESCRIBED BURNING should never be applied for a short-term gain at the expense of long-term site deterioration or at the expense of personal safety or property.

If the percentage composition by weight of desirable species expected to survive the prescribed burn is less than 25 percent seeding of adapted desirable species will be required.

**CONDITIONS WHERE PRACTICE APPLIES**

On all landuses.

Erosion and sedimentation rates may increase the first few years after burning. Downstream effects should be considered in planning prescribed burns and provisions will be made to reduce anticipated adverse effects.

**CRITERIA**

Clients will be referred to the designated agency responsible for planning and executing the prescribed burn.

Utilization of material to be burned should be considered when feasible either for fuel or forage or piled for wildlife cover as an alternative to burning.

Clients will have the necessary plans and permits from the California Department of Forestry and Fire Protection or the agency responsible for fire suppression and the Air Pollution Control District.

Unburned bufferstrips should be planned for and retained in all prescribed burns adjacent to all stream courses. As a general guide, the minimum width will be 50 feet plus 4 times the slope percentage (converted to feet).

Comply with applicable laws and regulations, including the state's Best Management Practices (BMPs).

Utility poles and other facilities will be protected.

**CONSIDERATIONS**

Burning should be managed with consideration for wildlife needs such as nesting and feeding cover.

Refer to the Field Office Technical Guide, Section IV for Range Seeding and the Vegetative Guide for approved plant species.

Special consideration is required for endangered plants and animals and for historical and archaeological sites.

Deferred grazing may be required on all PRESCRIBED BURNS for a minimum of one growing season immediately preceding the burn to maximize fuel. This will also improve vigor of desirable forage plants for better recovery following burning.

### Planning Objectives

- a. The objectives of planned PRESCRIBED BURNS will be documented. The planning objectives for using PRESCRIBED BURNING can vary significantly from single to multiple purpose. Some of the common objectives are:

1. Fire hazard reduction.
2. Increased water yield.
3. Improved fish and wildlife habitat.
4. Forest improvement.
5. Range improvement.
6. Improved access.

- b. There are generally three types of burns used: (1) rotational burns, (2) type conversion burns and (3) silvicultural burns.

1. Rotational burns are those in which portions of an area are burned in a set sequence and then reburned at planned time intervals, for example, every 20 years in chemise management. Rotational burns are used to break up large, even aged stands of brush, provide shrub regeneration with greater palatability and nutritive values, increase diversity, improve accessibility and increase forage production.
2. Type conversion burns are a combination of PRESCRIBED BURNING and follow-up practices, which are usually intended to convert brushland to some other vegetation type, such as, grass and forbs or timber. The purpose of type conversion is usually to provide fuel breaks, accessibility, additional forage for livestock and wildlife, increase habitat diversity with "edge", create cropland, such as pasture, vineyards, avocados, or establish timber stands.

Type Conversion prescribed burns are used to either remove brush or brush-grass competition or remove low value species to allow for the establishment of the more valuable tree species.

This type of prescribed burning is used on areas that may be too steep for mechanical brush removal, where there are restrictions for chemical control of brush competition or where mechanical treatment may cause soil and soil nutrient loss.

Soils subject to mass movement should not be type converted.

3. Silvicultural Burns are usually conducted for one of the following reasons:

- (a) Fire Hazard Reduction burns are generally conducted after timber harvest to reduce the fire hazard. Silvicultural systems normally associated with prescribed burning are either shelterwood or clearcutting. Seedbed preparation for natural regeneration or Direct Seeding is a major benefit of hazard reduction by prescribed fire.

- (b) Under burning removes or reduces competing vegetation to allow for natural regeneration or under planting, to reduce fire hazards by the reduction of forest floor fuel loadings, and weeding or thinning especially in young timber stands.

### Water Quantity

Application of this practice may cause more surface runoff if a high intensity storm event should occur before natural revegetation occurs. Generally, this practice will have only a minor effect on the quantity of surface and ground water.

### Water Quality

When the area is burned in accordance with the specifications of this practice the nitrates with burned vegetation will be released to the atmosphere. The ash, will contain phosphorous and potassium, which will be in a relatively highly soluble form. If a runoff event occurs soon after the burn there is a probability that these two materials may be transported into the ground water or into the surface water. When in a soluble state the phosphorous and potassium will be more difficult to trap and hold in place.

### Endangered Species Considerations

Determine if installation of this practice with any others proposed will have any effect on any federal or state listed Rare, Threatened or Endangered species or their habitat. NRCS's objective is to benefit these species and others of concern or at least not have any adverse effect on a listed species. If the Environmental

Evaluation indicates the action may adversely affect a listed species or result in adverse modification of habitat of listed species which has been determined to be critical habitat, NRCS will advise the land user of the requirements of the Endangered Species Act and recommend alternative conservation treatments that avoid the adverse effects. Further assistance will be provided only if the landowner selects one of the alternative conservation treatments for installation; or at the request of the landowners, NRCS may initiate consultation with the Fish and Wildlife Service, National Marine Fisheries Service and/or California Department of Fish and Game.

If the Environmental Evaluation indicates the action will not affect a listed species or result in adverse modification of critical habitat, consultation generally will not apply and usually would not be initiated. Document any special considerations for endangered species in the Practice Requirements Worksheet.

Some species are year-round residents in some streams, such as, freshwater shrimp. Other species, such as steelhead and salmon, utilize streams during various seasons. Be aware that critical periods, such as spawning, eggs in gravels and rearing of young may preclude activities in the stream that may directly affect the stream habitat during those periods. For example, there should be no disturbance of stream gravel beds that may have eggs in them. That could include any equipment in the stream or even walking in the stream or work upstream that may result in sediment depositing in the gravel beds. Document any special considerations for endangered species in the Practice Requirements Worksheet.

## PLANS AND SPECIFICATIONS

Specifications (burn plan) for burning shall be prepared for each burn. Specifications shall be recorded using approved specification sheets, job sheets, narrative statements in the conservation plan, or other acceptable documentation provided by the lead agency.

### Specification Guide

Active landslides, slips, gullies, unproductive sites or areas with dry raveling should not be burned.

A burn plan will be prepared by the lead agency. The plan is to include, but is not limited to the following: time of day, season of year, soil moisture, fuel moisture, and weather. Additional specifications may be required by the lead agency or as permit requirements.

All FIREBREAKS are to be installed prior to starting the prescribed burn (see Standards and Specifications for FIREBREAK).

### 1. ROTATIONAL BURNS

a. Rotational burns on rangeland can be used to improve and maintain optimum wildlife habitat and livestock forage in chaparral areas. The following specifications will promote this objective:

(1) As a general rule, topography with slopes less than 50 percent should be treated. It is more useable for livestock and wildlife and soil characteristics are usually better for forage production.

(2) PRESCRIBED BURNING should be scheduled to provide a 20 to 30 year rotation cycle. Twenty-five percent of the watershed vegetation should be in age class of less than 7 years old.

(3) Generally low elevation and south slopes should have cool season burns with some rain afterwards. North slopes or high elevations should be burned in summer.

(4) On steep slopes, burn the upper part of the slope the first year and lower part of the slopes in later stages of the Burning Rotation. Burns could be made smaller on steep slopes.

(5) Access roads to burns and firebreaks should be carefully located and designed including erosion control measures.

(6) First entry burns should be larger than optimum for wildlife habitat improvements, and keyed to maximum reduction of the potential for catastrophic wildfire.

(7) Post-entry burns should maximize edge (a 5-20 acre average burn would be best).

(8) Escape cover (brush waist-high, usually more than 7 years old) should be in useable proximity to fresh burns (1-3 years old). Small burns scattered through a brush field are better habitat than the mosaic formed by repeated burning adjacent to last years projects. A mosaic created through elevation is more acceptable than one created laterally. Burns should connect or create open ridges, swales, and saddles adjacent to timber and brush stands.

(9) Whenever needed and practical a reliable water source should be established on every

160 acres. Food and cover require water to be fully useable.

(10) Avoid burning trees where possible. Trees and larger vegetation provide needed thermal cover, roosting cover and food, for wildlife.

(11) Unless the goals are clearly understood, riparian vegetation should not be deliberately burned. It adds diversity and important component of wildlife habitat.

b. **PRESCRIBED BURNING** of wetlands is a wetland management tool, which reduces the accumulation of vegetation and the formation of peat. It seldom kills the wetland vegetation if the soil is saturated. Dry peat burns readily and a peat fire is difficult to control except by total submergence.

## 2. TYPE CONVERSION BURNS

Type conversions should only be attempted on sites that have sufficient soil depth, available water holding capacity, precipitation and suitable slopes for establishment and maintenance of desired species.

See Standards and Specifications for **RANGE PLANTING**, and **TREE/SHRUB ESTABLISHMENT**. As a general rule, type conversions will not be attempted on slopes, which exceed 35 percent. Type conversions for forage using perennial grasses should not be attempted unless the area can be closely managed with fencing, water and grazing rotation.

Clean burning requires ample fuel. Grazing may need to be deferred during the growing season immediately preceding the burn to maximize fuel. This will also improve vigor of desirable forage plants for better recovery following burning.

Type conversions are most effective on plant species that are not fire tolerant, or do not sprout from roots or crowns following fire. The plan will list species to be controlled.

Fire hazard reduction and preparation of areas for natural reseeding, direct seeding, or tree planting will be carefully planned to enhance future stand establishment.

## 3. POST BURN MANAGEMENT

a. On forestland, plant or seed tree species according to the Filed Office Technical Guide,

Vegetative Guide, and appropriate **TREE/SHRUB ESTABLISHMENT** Specifications.

Timing of seeding is of extreme importance to obtain the benefits of the ash seedbed.

Natural regeneration may be adequate if intensity of the burn, seed source, soil, and potential brush competition favors reproduction.

On soils that support oak-grass vegetation and have a moderate or severe erosion hazard, livestock will be withheld until an adequate grass stand is established. See **USE EXCLUSION** Standard and Specification. On soils that support conifers, livestock use will be withheld until tree seedlings are established and damage would be negligible.

b. On Rangeland, **PRESCRIBED GRAZING** following a prescribed burn is necessary for adequate erosion control and revegetation. Grazing practices must allow for conserving the resource bases; soil, water, vegetation, and wildlife. Class and type of livestock grazing or browsing, including wildlife, are to be considered in all stocking recommendations.

**PRESCRIBED GRAZING** will be a follow-up management practice on all **PRESCRIBED BURNS** for a minimum period of one growing season, or until ground cover and forage production are adequate.

Seeding may be required to reduce the erosion. Refer to Technical Guide **RANGE PLANTING** and **CRITICAL AREA PLANTING** Practice Standards and Specifications.

## OPERATION AND MAINTENANCE

Annually burned areas will be inspected for areas, which need additional work. Areas will also be compared the objectives of the prescribed burn to

Attention will be given to see if the objectives were met.

Reduce erosion

Repair of fire breaks

Status of new growth